

REMARKS

The Examiner is thanked for the indication that claims 1-4 and 19-21 are allowed.

Claims 1-10, 14-17, and 22-28 are presented for reconsideration. Claims 5, 8, 16, 23, and 26 are independent. Claims 6-7, 9-10, 14-15, 17, 22-25, and 27-25 are dependent. Claims 5-9, 14-16, and 22 are sought to be amended. Claims 11-13 have been canceled. These changes are believed to introduce no new matter, and their entry is respectfully requested. Based on the above Amendment and the following Remarks, the Applicant respectfully requests that the Examiner reconsider and withdraw all rejections and pass claims 1-10, 14-17, and 22-28 to allowance.

Rejection of Claims 16-17 Under Obviousness-Type Double Patenting

In paragraph 2, the Examiner rejected claims 16-17 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,292,282 to Mossberg et al. In papers submitted herewith, Applicants have filed a terminal disclaimer disclaiming the terminal part of any patent granted on the present application that would extend beyond the expiration of the full term of U.S. Patent No. 6,292,282 to Mossberg et al. Accordingly, Applicants respectfully request that the Examiner remove the rejection to claims 16 and 17.

Rejection of Claims 5-7 and 22 Under 35 U.S.C. § 103(a)

In paragraph 4, the Examiner rejected claims 5-7 and 22 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,850,189 to Sakanaka et al. (hereinafter "Sakanaka") in view of U.S. Patent No. 5,812,318 to Babbitt et al. (hereinafter "Babbitt"). To establish a *prima facie* case of obviousness, all claim features must be taught or suggested by the cited references. Applicants respectfully traverse the rejection.

Amended claim 5 recites: "A central station for an optical network, comprising: a transmitter coupled to produce an optical data signal; and an encoder coupled to apply a composite code to the optical data signal, the composite code having a first-level code

and a second-level code, wherein the first-level code is to identify a first user station and the second-level code is to identify a second user station.” Applicants submit that Sakanaka in view of Babbitt fails to teach or suggest each and every element of claim 5 as amended and claim 5 therefore is patentable over Sakanaka in view of Babbitt. Claims 5-7 and 22 properly depend from a patentable claim and are thus patentable as well. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejections to claims 5-7 and 22.

Rejection of Claims 8-12 Under 35 U.S.C. § 103(a)

In paragraph 5, the Examiner rejected claims 8-12 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,841,776 to Chen (“Chen”) in view of Babbitt. Applicants respectfully traverse the rejection.

Amended claim 8 recites “A multiplexing station for an optical network, comprising: a temporal address decoder coupled to receive a signal containing data coded according to a first downstream address code and a second downstream address code and to strip the first and second downstream address codes from the signal, wherein the first downstream address code is to designate a destination for a first portion of the data and the second downstream address code is to designate a destination for a second portion of the data” Applicants submit that Chen in view of Babbitt fails to teach or suggest each and every element of claim 8 as amended and claim 8 therefore is patentable over Chen in view of Babbitt. Claims 9-10 properly depend from a patentable claim and are thus patentable as well. Claims 11-12 have been canceled, which renders the rejection to them moot. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejections to claims 8-12.

Rejection of Claims 13-17 Under 35 U.S.C. § 103(a)

In paragraph 6, the Examiner rejected claims 13-17 under 35 U.S.C. § 103(a) as being obvious over Chen in view of Babbitt and U.S. Patent No. 5,467,212 to Huber (“Huber”). Applicants respectfully traverse the rejection.

Claim 13 has been canceled, which renders the objection to it moot. Claims 14-15 properly depend from a patentable claim (Claim 8), which renders them patentable as well.

Amended claim 16 recites “A method, comprising: selecting a first temporal code and a second temporal code for an optical signal to identify a first user station and a second user station, respectively; applying the first and second temporal codes to the optical signal with at least one fiber Bragg grating; broadcasting the optical signal to the first and second user stations; and recovering data from the first and second temporal codes by the first and second user stations, respectively.” Applicants submit that Chen in view of Babbitt in view of Huber fails to teach or suggest each and every element of claim 8 as amended and claim 8 therefore is patentable over Chen in view of Babbitt in view of Huber. Claim 17 properly depends from a patentable claim and is thus patentable as well. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejections to claims 13-17.

CONCLUSION

The Applicant submits that all grounds for rejection have been properly traversed, overcome, or accommodated. Therefore, the Applicant respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections and pass claims 1-10, 14-17, and 22-28 to allowance. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

Respectfully submitted,

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VERSION OF CLAIMS WITH MARKINGS

1. (Allowed) A communication system, comprising:
 - a central station that receives an optical data signal and applies a composite code to the optical signal, the composite code including a first code and a second code, so as to produce a composite-coded optical signal;
 - a first-level mux station that receives the composite-coded optical signal and decodes the first code from at least a portion of the optical signal, producing a first-level decoded optical signal;
 - a second-level mux station that receives the first-level decoded optical signal and decodes the second code from at least a portion of the optical signal, thereby producing a fully decoded optical signal; and
 - a user station that receives the fully decoded optical signal.
2. (Allowed) The communication system of claim 1, wherein the first-level mux station includes a reconfigurable encoder for applying a selected composite code.
3. (Allowed) The communication system of claim 1, wherein the central station applies a composite code selected from a set of composite codes.
4. (Allowed) The communication system of claim 3, wherein composite codes are generated from a set of first-level codes and a set of second-level codes.

5. (Amended) A central station for an optical network, comprising:
[a receiver that receives a first optical data signal and produces a corresponding electrical data signal;]
a transmitter [that produces] coupled to produce [a second] an optical data signal [based on data defined by the] from an electrical data signal; and
an encoder [that applies] coupled to apply a composite code to the [second] optical data signal, the composite code having a first-level code and a second-level code, wherein the first-level code is to identify a first user station and the second-level code is to identify a second user station.
6. (Twice Amended) The central station of claim 5, wherein the composite code to be applied by the encoder is a temporal code.
7. (Twice Amended) The central station of claim 6, wherein the composite code is an address code [that] designate[s] an intended destination for [at least some of the] data defined by the electrical data signal.
8. (Twice Amended) A multiplexing station for an optical network, comprising:
a temporal address decoder [that receives] coupled to receive a signal containing data [and] coded according to a first downstream address code and a second downstream address code and [strips] to strip the first and second downstream address codes from the signal, wherein the first downstream address code is to designate[s] a destination for [at least] a first portion of the data and the second downstream address code is to designate a destination for a second portion of the data; and
a temporal address encoder that receives a signal containing data and encodes the signal according to an upstream address code that identifies a destination of at least some of the data].
9. (Twice Amended) The multiplexing station of claim 8, wherein the temporal address decoder [strips] is to strip an optical code from the signal.

10. (Amended) The multiplexing station of claim 9, wherein the optical code is a composite code.
11. (Canceled) The multiplexing station of claim 8, wherein the temporal address encoder applies an optical code.
12. (Canceled) The multiplexing station of claim 11, wherein the optical code is a composite code.
13. (Canceled) The multiplexing station of claim 8, wherein the temporal address encoder includes at least one fiber Bragg grating that applies the code.
14. (Twice Amended) The multiplexing station of claim 8, wherein the temporal address decoder comprises at least one fiber Bragg grating [that strips] coupled to strip the code.
15. (Amended) The multiplexing station of claim 14, further comprising an optical circulator [that directs] coupled to direct the signal to at least one fiber Bragg grating.
16. (Twice Amended) A method [of broadcasting an optical signal to a plurality of user stations for data recovery only by a selected user], comprising:
selecting a first temporal code and a second temporal code for [the] an optical signal to identify a first user station and a second user station, respectively; [and]
applying the first and second temporal codes to the optical signal with at least one fiber Bragg grating;
broadcasting the optical signal to the first and second user stations; and
recovering data from the first and second temporal codes by the first and second user stations, respectively.
17. (Amended) The method of claim 16, wherein the temporal code is a composite code.

18. (Canceled) A passive optical network, comprising at least one multiplexing station that receives a first optical signal, applies a first-level code to the first optical signal, and transmits a coded first optical signal; and that receives a second optical signal, decodes a first-level code from the second optical signal, and transmits a resulting decoded optical signal.

19. (Allowed) A passive optical network, comprising:

at least one multiplexing station that receives a first optical signal, applies a first-level code to the first optical signal, and transmits a coded first optical signal; and that receives a second optical signal, decodes a first-level code from the second optical signal, and transmits a resulting decoded optical signal; and

a second-level multiplexing station that receives an optical signal from the first-level multiplexing station and decodes the optical signal to decode a second-level code.

20. (Allowed) The passive optical network of claim 19, wherein the second-level multiplexing station applies a second-level code to an optical signal that is transmitted to the first-level multiplexing station.

21. (Allowed) A communication system, comprising:

a user station that transmits an optical signal.

a second-level mux station that receives the optical signal and applies a second-level code to the optical signal, thereby producing an encoded optical signal;

a first-level mux station that receives the encoded optical signal from the second-level mux station and applies a first-level code to the encoded optical signal producing a composite-coded optical signal; and

a central station that receives the composite-coded optical signal and decodes the first-level code and the second-level code to identify the user station that transmitted the optical signal.

22. (Amended) The central station of claim 6, wherein the code to be applied by the encoder is a composite code.

23. (New) A central station for an optical network, comprising:

a decoder coupled to apply a composite code to an optical data signal, the composite code having a first-level code and a second-level code, wherein the first-level code is to identify a first user station and the second-level code is to identify a second user station; and

an optical receiver coupled to produce an electrical signal from the optical data signal.

24. (New) The central station of claim 23, wherein the composite code to be applied by the encoder is a temporal code.

25. (New) The central station of claim 24, wherein the composite code is an address code designate an intended destination for data defined by the electrical data signal.

26. (New) A multiplexing station for an optical network, comprising:

a temporal address encoder coupled to encode an optical signal according to a first downstream address and a second downstream address, wherein the first downstream address is to designate a destination for a first portion of data carried by the optical signal and the second downstream address is to designate a destination for a second portion of data carried by the optical signal.

27. (New) The multiplexing station of claim 26, wherein the temporal address encoder includes at least one fiber Bragg grating to encode an optical signal.

28. (New) The multiplexing station of claim 27, further comprising an optical circulator coupled to direct the optical signal to the at least one fiber Bragg grating.